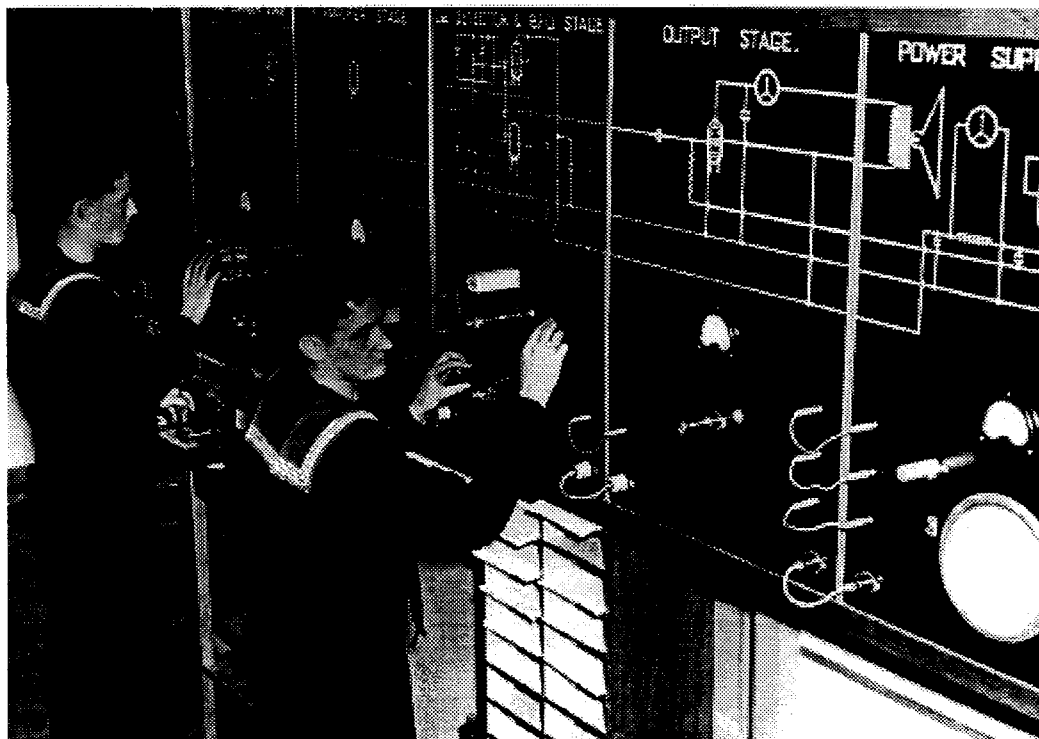




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16. Outside the School of Mines Bonython Building is class 5 in the summer of 1946. L to R Back row are "Hank" Hannington, Gerry Moran, Greg Sharp, Jim Sommerville. Centre row are Ron Richards, Bill Bray, NK, Merv Johnson, "Ned" Kelly, Ken Hare. Front row are Ron West, Alan Huett, (possibly) James O'Bryan. Front row are Ron West, Alan Huett and possibly Jim O'Bryan . Photo courtesy Greg Sharp.

17. Class 6 in the grounds of the School of Mines. L to R back row Doug Hawke, R. Ansell, Keith McKee, Lawrie Kirwan, Kevin "Emile" Zoch, Murray Doyle, Alan Earle, Jim Healy. Front row Brian Robertson, "Blue" McAree, Keith Craig, Hilary O'Connell, Arthur Bell, Les Storer, Jim Clark, Ron Dunn, S "Tassie" Williams. Photo courtesy Doug Hawke.

18. Victory Day, June 10 1946 Adelaide. To identify some of the RM's who marched, consider that the block of sailors in round rig are in columns 1 through 12 looking L to R, and that they are in rows A to K foreground to middle ground. Thus the right hand man (the marker) is in column 1 row A; the man immediately to the marker's left is column 2 row A; etc.

NAME	COL.	ROW	NAME	COL.	ROW
George Bloor	1	A	Max Petersen	11	H
Des Miller	2	A	Gerry York	12	I
Phil Chamberlayne	2	B	Ron West	9	G
Peter O'Meagher	3	C	Sid May	12	K
Ken Donald	3	A	Jake Kerr	7	G
Basil Richards	5	C	Bluey Woods	4	G
Neil Tindal	12	C	Ken Hare	3	I
Mick Cosgrove	8	4	John Rowlands	2	H
Bill Bray	9	D	Arthur Drury	1	H

Photo courtesy Sid May.

19. Adelaide November 1946, the first post war Armistice Day parade. Patriotic fervour was still high in those days, but these sailors were not enthusiastic volunteers. The inspecting officer was Sir Willoughby Norrie. L to R front row 5th Phil Marshall, 6th Alf George, 11th Reg Cordon, 14th Jim Gleeson, 15th Ted Hocking, 17th Glen Horrocks, 18th Arthur Drury, 19th Dave Thompson and extreme right Ross Watson. Centre row 5th Syd Richards, 11th Ron Richards, 13th Len Moyle, 15th Dick Withers. Third row 1st Bruce Law, 5th Hank Hannington, 7th Bill Reed, 12th Keith Staindl, 13th Len Sharp, 18th Jim Preston. Photo courtesy Bill Reed, Bruce Law and Jim Preston.

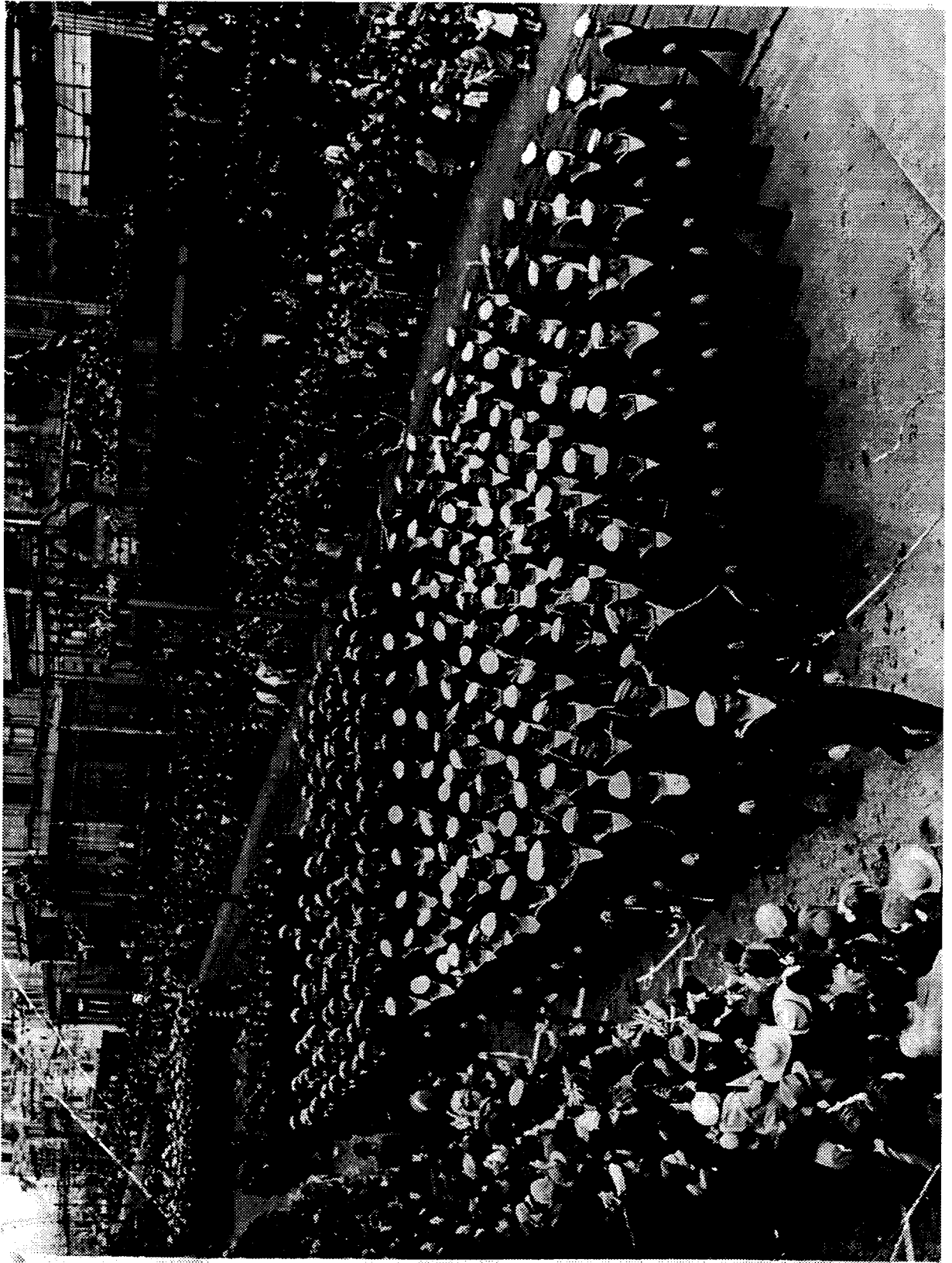
20. Class 1 taken in April 1946 in the grounds of the School of Mines Adelaide. L to R back row, Terry Hall, Les Green, Ed Roberts, Ken Bryant, Des Miller, Frank Ludbey, Ron McArthy, George Bloor. Front row, Deirn Geard, Les Bail, Max Peterson. Photo courtesy Margaret Bail.

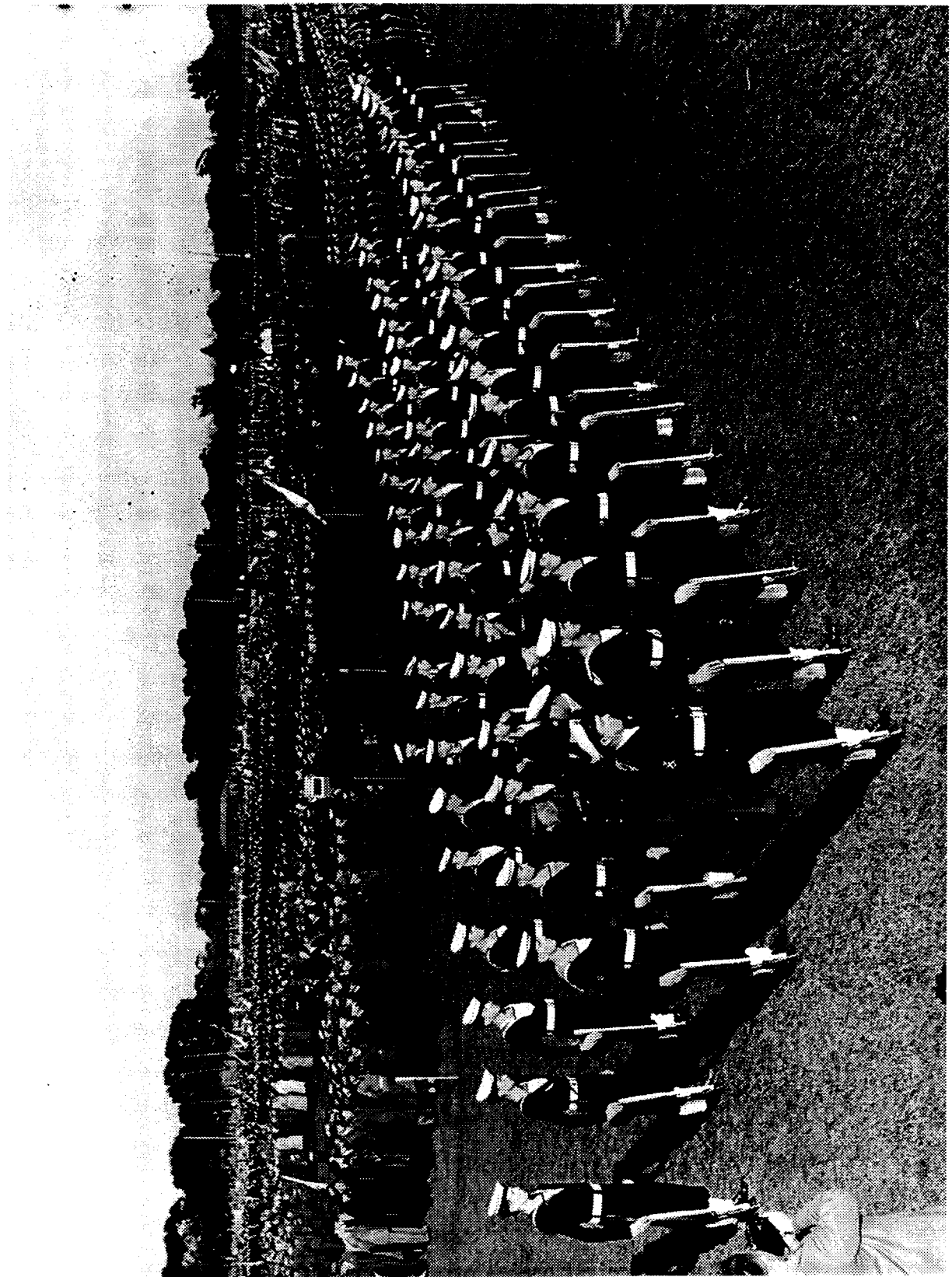


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21. The RAN version of Dad's Army? Taken at Torrens outside the depot recreation room. L to R back row Basil Richards, Gordon "Blue/Seagull" Woods, Gerry York, Max Petersen, Jake Kerr, Neil Tindal, Mick Cosgrove. Front row Peter O'Meagher and Bill Taylor. Photo courtesy Bill Taylor and Max Peterson.

22. No photo

23. No photo

24. Jolly Jack ready for a run ashore. Taken immediately outside of Penelope in Torrens, possibly in the late winter of 1946. L to R "Bambi" O'Connell, "Speed" Dunn, "Blue Mooney", "Plum" Duffy, "Morry" Hart, "Robby" Robertson. Photo courtesy Bill Robertson.

25. Class 9 at the School of Mines Adelaide, around February 1947. L to R back row, Alan McPhee, Neville Shaw, John Scanlan, Les Fox, Phil Foggon, Nigel Sedwick, George Stevens. Front row Not Known, Gordon Allen, Colin Parry, Roy Green. Author's photo.

26. At this early stage of our careers we had not yet learned the old salt's adage "Never Volunteer!". These young enthusiasts were volunteers to assist in setting up a public exhibition in the Exhibition Hall in early 1947. The ring master was one of our lecturers Mr Jack Eustace, otherwise known as "Practical Jack". Reading L to R there is Neville Shaw, Les Fox, Jim McKew, John Scanlan, Practical Jack and behind him Russell ?, Allen Hoskins, Peter Holman, Mick Ivory, Geoff Smith, Alan McPhee and Nigel Sedwick. Photo courtesy Allen Hoskins.

27. This is one of those beaut photos which becomes the centre of debate when old times are discussed. According to the handwritten note on the back it was taken at "Some railway station between Adelaide and ?". Which railway station? And what was the occasion for this group to come together? You see there is Brian Robertson and Ron Jones both of 7 Class, Les Fox of 9 class, Nick Permyakoff of 6 class, Frank Hastings who started in 9 class and who reverted to his previous calling of Telegraphist early in 1947, and John Saywell who started in 9 class and who advanced to 8 class. Clearly this will become one of life's unsolved mysteries. Photo courtesy Ron Jones.

28. You've seen it before. "Our highly skilled professional team is trained to give you maximum satisfaction and complete your most demanding task in the minimum of time - and at competitive rates". L to R back row is Ron Lyons, Allen Hoskins, Dave Brooks, Unknown, Dave McColl, Roy Green. Front row is Neil Anderson, Pat Lawford and Jim Duncombe. These stalwarts are mainly 10 class. The photo was taken near Torrens and the group was possibly a working party on at the boat shed on a Saturday morning. Photo courtesy Dave McColl.



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29. L to R is Len Moyle, Ross Watson, Rill Reed, Not Known, Len Sharp, "Hank" Hannington, Dave Thompson. Kneeling is Alf George and reclining gracefully is Ted Hocking. Taken in 1946. The occasion for this group of mainly 4 Class being together is not known, but possibly they were mess cooks for the day because of the informality of the dress. The corrugated iron clad building in the background was the type of accommodation the earlier classes had prior to moving to the relative luxury of Penelope in August 1946. These basic constructions were dignified with historic names like Drake for classes #3 and #4, and Valiant for the two earlier classes. Photo courtesy Jim Preston.

30. Football. The legitimate opportunity to give vent to one's frustrations. The caption for this photo simply reads "HMAS Torrens football team Adelaide 1946." Which football code? One assumes Aussie Rules because of the 18 players. Besides which in those days no self respecting sportman would play any other sort of football in Adelaide which was marginally less one-eyed about Aussie Rules than was Melbourne. L to R back row the players are Eddie Baxter, Keith McKee, Arthur Bell, Jim Sommerville, Gerry York, Jim Preston, Basil Richards, Ron West, Alf George, Max Peterson, Ern Kelly, Gerry Moran. Front row Ken Hare, Gordon Agnew, Bob Flower (?), Jim Gleeson, Bill McConville, Hilary O'Connell. Photo courtesy Max Peterson.

31. More football. L to R Far back row is Not Known, Not Known, Bill Grant. Centre row, Colin Macnish, Allen Hoskins, Ray Brown, "Dave" McColl, Hilary O'Connell, Jim Cunneen(?), Not Known. Front row "Ned Kelly, Arthur Bell, "Speed" Dunn, Les Fox, Not Known, Not Known. Photo courtesy Allen Hoskins.

32. Still more football. This lot are the Torrens Rugby league team July 1947. L to R Back row, Jim Collins, Tim Dyer, "Blue" Rutherford, Michael O'Halloran, Don Turnbull, Bob Ahearn, Ron Hotchkis, Jack White. Front row Victor Buck-Pitt, Lloyd Cheetham, Pat Fennell, Neil Anderson, William Pearsall. Photo courtesy Vic Moore.

33. Yet more football. This is a Navy Rugby team, taken at Adelaide some time in the winter of 1947. Record to date of photo was: Played 1. Losses: 1. L to R back row Bo Ahearn, Pat Lawford, Pat Fenely, Not Known, Don Turnbull, Roy Green, "Speed" Dunn, Gordon Allen. Front row, "Blue" Taylor, Neil Anderson, Not Known, John Scanlan, Jim Duncombe, Brian Robertson, Jack White. Photo courtesy "Dave" McColl and Roy Green.

34. No woman, EVER, paid as much attention to her dress and appearance as did the Torrens RM's when dressing for a run ashore. The creases in the bell bottom trousers had to be precisely correct, all seven of them. The silk scarf had to lie exactly around the front of the jacket. The white shirt (Dicky Front) had to be pristine with the ironed crease dead centre. This photo taken about March 1947 shows L to R Allen Hoskins, Jim McKew, Gordon Allen, Michael Ivory, Geoff Smith. This photo illustrates the correct way to wear the round hat as illustrated by Mick Ivory, with the brim one inch (2.54 centimetres to you youngsters) above the eyebrows. All others are "flat-a-back" that is worn towards the back of the head. To be seen by the shore patrol (Naval Police) wearing a hat flat-a-back meant certain apprehension and subsequent punishment such as 10 days without shore leave privileges. Photo courtesy Allen Hoskins.



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35. The age of innocence! L to R Vic "Pony" Moore, Alwyn "Cuddles" and later "Stacker" Williams, and Lloyd Cheetham. Some poor unfortunates had to serve the entire time in the Navy without being given nick names. Photo courtesy of Vic Moore.

36. Watsons Bay looking west from HMAS Watson in 1947. Features the pilot ship Captain Cook at anchor. Alongside Watsons Bay pier is the depot supply ship HMAS Platypus, and one of the "Q" class ships. Photo courtesy Bill Reed.

37. The Gap from HMAS Watson February 1947.

38. The Guard, HMAS Watson December 1949. Note the huts which were typical of the accommodation and of some of the equipment and lecture rooms. Always hot in the summer and cold in the winter. Photo courtesy of Bill Reed.

39. By the time we reached this sophisticated style of uniform we were beginning to show some vestiges of competence. We almost knew what we were doing. This is class 3 at HMAS Watson. L to R Back row is Geoff Hosking, Phil Chamberlayne, Truby Gallop, Peter O'Meagher, Ken Donald. Centre row is Bill Flaherty, Bill Brown, Stan Parr instructor, Ron West, Bill Bray. Front row is Eddie Baxter, Jake Kerr, Sid May. Photo courtesy Stan Parr, and Geoff Hosking.

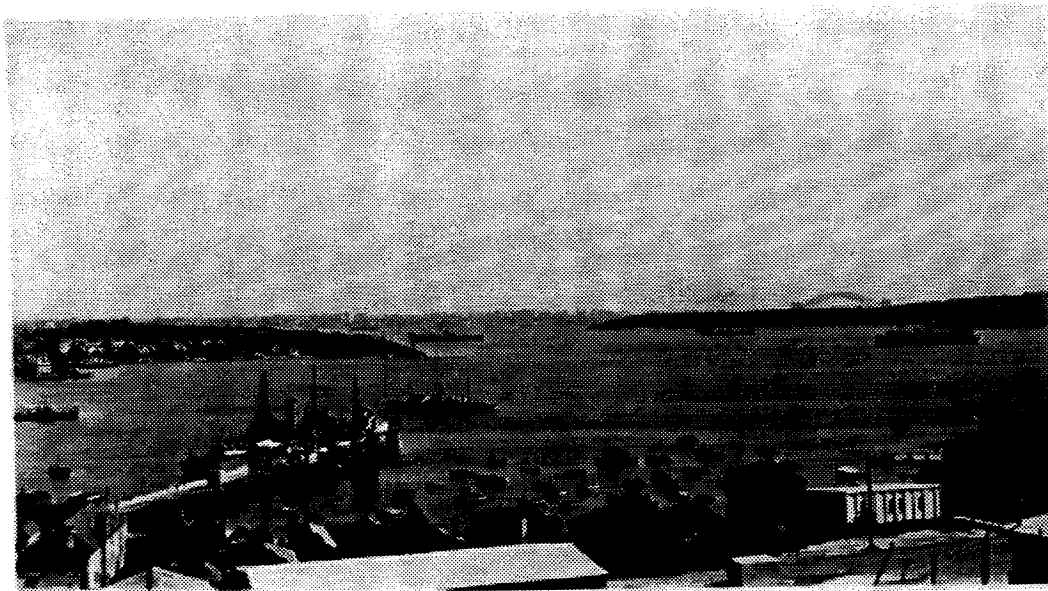
40. Class 3 Radar at HMAS Watson. L to R back row is Phil Chamberlayne, "Tom" Gallop, Peter O'Meagher, Bill Flaherty, PO Stan Parr Instructor, Bill Brown, Ken Donald. Front Row Ron West, Geoff Hosking, Sid May, Bill Bray. Photo courtesy of Sid May.

41. The caption on this photo reads "The Remnants of class 7 conversion course 1951". Taken at HMAS Watson. L to R back row, Maurie Hart, Frank McRae, Ron Jones, Kevin Duffy, Murray Doyle, John Humphrey, John Bubbs, Phil Foggon. Front row, Bob Mowday, Hector "Kiwi" Dyke, Bill Robertson. Photo courtesy of Ron Jones and John Humphrey.

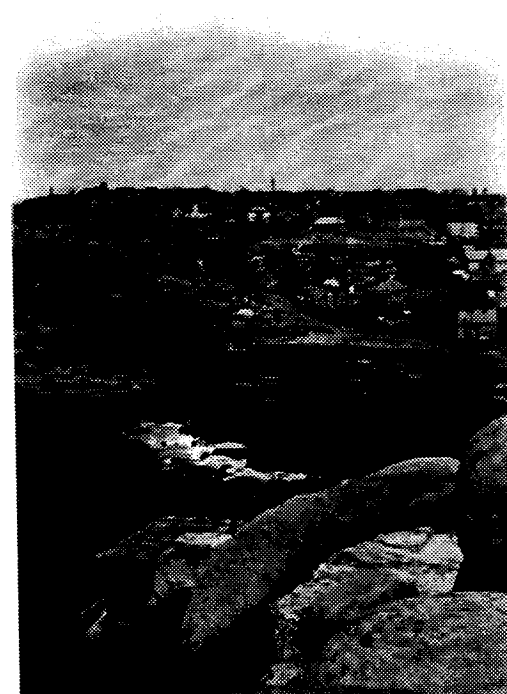
42. More achievers. This is 4 class at Watson, possibly in the summer of 1946. L to R back row is Garth Eldering, Jim Preston, Phillip Watson, Gerry Moran, Dave Thompson, Glen Horrocks. Middle row is David Wightman, Alf George, Dave Gravel Instructor, Arthur Drury, Reg Cordon. Front row is Ted Hocking, Bob Flower, Len Sharp, Bill Reed. Photo courtesy of David Wightman and Bill Reed.

43. And even more achievers. This is 6 class at Watson. L to R back row, Phil Marshall, Ken Mooney, Arthur Drury, Doug Hawke. Front row, Gil Harrington, Keith Craig, Keith McKee, Nick Permyakoff, Gerald Dewey, Mal Fairlie, Alan Earle. Note HMAS Platypus and a "Q" class vessel in the right background. Photo courtesy of Doug Hawke.

44. 4 Class at Watson taken on 21st February 1947. L to R back row, Gerry Moran, Bill Reed, Dave Thompson, Glen Horrocks, Alf George, Phil Watson, Arthur Drury. Middle row, Reg Cordon, Len Sharp, Ted Hocking, Garth Eldering. Front row, David Wightman.

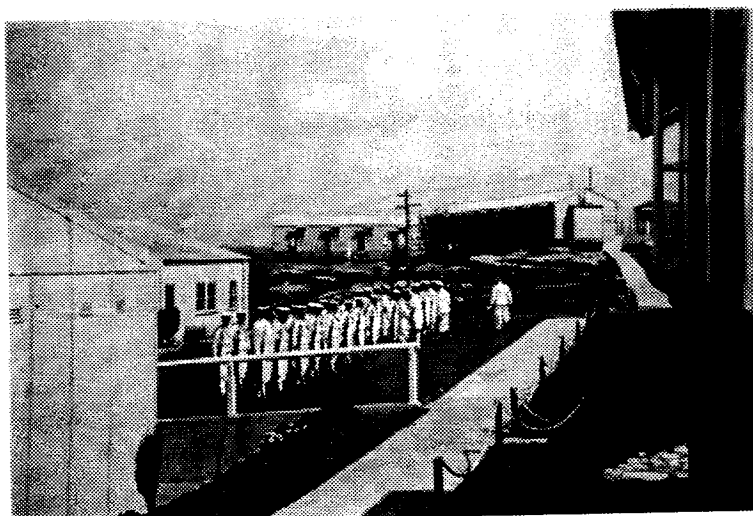


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45. Three classes of RM's totalling 30 RM's were shipped to UK to study Airborne and related equipment at HMS Ariel in Lancashire for a period of approximately 12 months. This photo was taken at West Camp HMS Ariel near Culcheth in Lancashire about March 1950. L to R back row are Les Bail, Jim Duncombe, Bill Grant, Jim Sommerville, Alan Earle. Front row is Jim Cunneen, "Shortman" Walker R.N. Instructor, Brian Robertson, Jack White, Des Miller, Len Sharp and Allen Hoskins. Note the right arm rate on the arms of Jim Cunneen and Allen Hoskins was the old Tels badge. Alan Earle however is wearing the new badge of R in the middle of crossed lightening flashes. When qualified after the full 12 months conversion training, the badge was "AR" inside crossed lightening flashes. Photo courtesy of June Earle and Brian Robertson.

46. This is an unashamed and blatant example of author's licence. Taken on one of the island of Hong Kong's beaches around 1953 it shows the author left with his mate Alan Earle. Photo courtesy June Earle.

NAVAL JARGON

INTRODUCTION

Each trade, profession, culture has its own unique and special language. In the 1990's this is epitomised by the computer industry. Have you ever listened to two computer buffs discussing computer technology? To the uninitiated it is totally incomprehensible. Yet when you understand, it is simple and generally logical. So it is with Naval jargon, and the purpose of this section is to provide the reader with interpretation of some of the more common language used by those RM's of the 1940's. It is necessary to be able to understand this jargon as many of the "dits" published in this book have scarcely any editing, being recounted just as the RM's told them.

ADRIFT

Absent without approved leave.

ALL ABOUT

Very excited

AROUND THE BUOY

Coming back for a second helping of food.

ARTISAN

Similar to Artificer except that this term generally referred to skilled tradesmen outside the regular engineering world. Such men were shipwrights and carpenters. Employment conditions for Artisans and Artificers were generally very similar.

ARTIFICER

See Tiffy. A tradesman who had completed a 3 or 4 year apprenticeship in a trade such as electrical or engineering fitting and turning. Whereas it may take a recruit into the seaman or stoker branches to rise to the rank of Petty Officer in say 5 to 8 years, Artificers would be granted the Petty Officer rank after their first 6 or so weeks of Recruit training, and would be confirmed in rank 12 months after.

BANGERS

Sausages

BARE ARSED:

Non commissioned officers of Leading Rate and Petty Officer wore a distinguishing badge of rank on the left sleeve. Leading hands wore one anchor, Petty Officers wore two crossed anchors surmounted by a crown. For each four years of continuous good conduct, a stripe was awarded to be worn immediately below the anchor(s). Typically any rating would have his first Good Conduct Stripe prior to being promoted to the Leading Rate. However, some ratings who had specialist skills were given the promotion well before achieving 4 years of good conduct service. The traditionalists spoke disparagingly about this, and referred to NCO's without GC stripes as being "bare arsed" meaning young, immature like a baby's bottom without hair.

BEAR OFF

Push (a boat) away from.

BEAT RETREAT

In the 18th and 19th centuries when two opposing armies fought each other, at dusk when it became difficult to see the gun sights and the enemy, all hostilities ceased for the period of darkness. Beat Retreat is a combined musical and armed guard formal and colourful ceremony symbolising the cessation of armed conflict as dusk falls. Well executed by the RAN's trained musicians and guard, staged with suitably placed lighting, and directed with elements of surprise, it is an emotionally moving and entertaining spectacle.

BOATS

Destroyers

BRASS HAT

Officers of the rank of Commander and above wore a gold laurel wreath around the rim of the peak of their caps. Such officers were known as brass hats.

BREW BOAT

Tea time

BRIGHTWORK

Brass or chrome fittings

BRILL

Brass polishing fluid

BUFFER

A loose analogy is that of foreman. The Buffer was invariably an older and experienced sailor, Petty Officer or CPO, whose main responsibility was to supervise the seamen in their respective seaman duties such as scrubbing decks, splicing ropes, painting.

BUGS/BUGGY

Dirty.

BUNTING TOSSER

Signalman who is skilled in the art of communication by flag displays and flag movements

BURGOO

Porridge. Usually thick enough to stand a spoon upright.

BUZZ

Rumour

BUZZ MERCHANT

Rumour spreader.

CAKLEBERRIES

Eggs

CAPTAIN OF THE HEADS

A dignified term describing an undignified job, that of being relegated the responsibility for cleaning the "Heads" or toilets.

CART

Hammock

CAST OFF

Let go all lines (ropes) securing the vessel.

CHANNEL FEVER

The excitement which comes with nearing home after time at sea.

CHIEF GI

See GI. Chief GI was at the top of the Gunnery profession as an NCO.

CHIEF GUNNER'S MATE

A Chief Petty Officer with gunnery qualifications

CHIEF TEL

See Telegraphist. Chief Tel was at the top of the Telegraphist profession as an NCO

CHIEF YEOMAN

See Yeoman. Chief Yeoman was at the top of the Signals profession as an NCO.

CHOKEY

Cells/the brig

CHOOKS

Sailors undergoing punishment such as stoppage of leave were required to muster together at set times during the day to be assigned extra duties. This procedure was called Chooks. Origin unknown.

CLASS OF UNIFORM

For lower deck ratings, (non commissioned personnel) there were 3 classes of uniform. Class 1 was "square rig" with brass buttons. That is conventional style trousers, double breasted jacket, white shirt, black tie. This uniform was worn by the senior NCO's - confirmed in rank Petty Officers and Chief Petty Officers.

Class 3 was the same style but with black buttons. This uniform was worn by support staff such as Sick Berth Attendants, Officers' Stewards and Suppl Branch staff such as Cooks and Writers. Class 2 was the traditional sailor's rig of bell bottomed trousers, tight jacket, blue collar with the three white stripes, black silk scarf, white round necked shirt with blue trim and the round sailor hat complete with ship's name (Ship's tally). All seamen, gunners, torpedomen, wireless telegraphists, hydrographers, photographers, stokers wore this class of uniform.

CLEAR LOWER DECK

All hands assemble at a specified place immediately.

COLOURS

At 0800 precisely each day in harbour, the white ensign is ceremoniously raised in every Naval vessel and shore establishment. All on deck stand to attention and the Officer of the Watch salutes as the Bos'un's Mate shrills on his Bos'un's pipe. To start the process, a Signalmen diligently watches a clock, and when the time is precisely 0800 he announces to the Officer of the Watch (OOW), "Eight o'clock sir". The OOW commands, "Make it so", and with these profound words of authority, the ceremony of raising the flag and saluting same commences.

COOK OF THE MESS

The term originated when each group of sailors sharing a particular accommodation (the mess) would take turns going to the galley (kitchen) at meal times to collect food for that mess. The Cook of the Mess would also clean up after the meal and be generally responsible during his period of duty for the tidiness and cleanliness of the quarters.

CPO

Chief Petty Officer, the most senior Non Commissioned Officer. A position only attained after years of experience, fully conversant with all aspects of his profession, continuous good conduct and with Commanding Officer recommendation.

COP A GREENIE

Be swamped by a large wave.

CRUSHER

A derogatory term for Naval Policemen

DAILY ORDERS

A typed notice placed on all notice boards each day listing important items for all to know. Such events as sunrise/sunset, liberty men, requestmen and defaulters, church services etc.

D.D.M.

Deputy Director of Manning

DEAD LIGHT

A heavy metal cover which is secured over a port hole (scuttle) to prevent light from the ship showing, or to help protect the interior of the ship from heavy weather or enemy action.

DECK HEAD

Houses have ceilings, ships have deck heads.

DECK HEAD LIGHT

A ship's ceiling light. (Some houses occupied by ex sailors also have deck heads, deck head lights, starboard windows etc.)

DEVIL DODGER.

Minister of religion. See Sin Bos'n.

D.E.V.T.

Director of Education & Vocational Training

DHOBI/DHOBY/DHOBEY

Clothes washing. Taken from an Indian word meaning clothes washing.

DICKY FRONT

Issued uniforms were designed to be indestructible, and to be less fashionable than a sack cloth. To appear to be smartly dressed, various devices were invented by trendy sailors. One such device was the dicky front which was worn in place of the white shirt with the navy blue stripes sewn around the neck. The dicky is best described as being like two baby bibs worn one at the front and the other at the back, tied taut against the manly chest by tapes which were wound around the body back and front. It has been said that a tailor in Port Melbourne used to make and sell dickies with artificial hair sewn to the top.

DIPPED A RATE

Demoted

DIPPED OUT

Missed out, failed, lost, passed over.

DIT

A story, usually humorous, and often with the truth considerably stretched or distorted.

DITCH

Throw overboard, or discard.

DITTY BOX

Personal storage for odds and ends.

DIVISIONAL OFFICER

Every division such as Electrical, Seamen, Engineering, Communication, Gunnery etc had at least one officer assigned as the divisional officer for the sailors. He was to be their mentor. Some were naturals and related to their charges in a responsible way such that they earned respect and liking. Others were hopelessly inadequate neither enjoying nor comprehending the importance of the responsibility for the growth and development of their charges.

DIVISIONS

The army calls it Parade. Most of the ship's company, excepting those on essential duty like guard, turn out in their best uniforms, to be inspected by the CO, to march past if space permits, generally once each week.

D.N.C.

Director of Naval Construction

D.N.L.

Director of Naval Electrics

DOEY

In love. From doe eyed.

D.of M.

Director of Manning

DOG WATCH

Correctly 2 hours duration between 4.00 pm and 6.00 pm, and between 6.00 pm and 8.00 pm. The term is also used to illustrate a short period of time. For example, "He's only been in the Service a Dog Watch" meant he was a new chum, a Macca. (See Watch)

DRAFTED

On transfer, officers were appointed to ships. Ratings and NCO's were drafted

D.T.S.R.

Director of Technical Staff Requirements

DUFF

Dessert, pudding.

DUSTMAN

Stoker

DUTY WATCH

The watch (group of persons) required to be ready and available to perform tasks necessary for the continued satisfactory operation of the function, department or ship

FALL IN/OUT

To fall in means to assemble in ranks. To fall out means to dismiss or disperse.

FANG FARRIER

Dentist. See Toothy

FLAG OFFICER

A senior officer, generally of the rank of Commodore and above, eg Vice Admiral, appointed to command a fighting unit such as a cruiser squadron, battle fleet or a geographic area.

FLAKE OUT

Lie down and rest or go to sleep.

FLASH UP

To commence. From the days of steam when boilers had to be lit to raise steam

FLAT-A-BACK

A sailor's circular hat is meant to be worn with the lower rim approximately one inch above the eyebrows. By pushing the hat towards the back of the head so that it is precariously balanced in an almost vertical position is to wear the hat "flat-a-back". For illustration, see photograph #34. All except Mick Ivory have their hats flat-a-back.

F.O.C.A.F.

Flag Officer Commanding the Australian Fleet.

F.O.I.C.E.A.

Flag Officer in Command Eastern Australian Area.

FOUR BY FOUR

Toilet paper

FND

Flinders Naval Depot, (HMAS Cerberus) situated at Crib Point, Victoria.

FUNGUS

Beard

GALLEY

Ship's kitchen

GANNET

A greedy person who eats anything

GASH

Additional, spare, such as food or money or clean dicky fronts etc.

G C STRIPE

One granted for every four years of continuous good conduct. A maximum of three could be worn on the left sleeve. (See bare arsed above)

GI

Gunnery Instructor

GOFFER

Soft drink eg lemonade.

GOLDFISH

Tinned fish in tomato sause. See Herrings In.

GONGS

Medals, such as decorations, campaign medals, coronation medals, long service and rifle shooting medals awarded as appropriate to the circumstances and worn on the best uniform at ceremonial occasions.

GREASE THE SLIDE

Pass the butter (please)

GUNS

Gunnery Officer.

HEADS

Toilets. Said to have originated in the days of sail when the toilets were built in the forepart of the ship or at the head for the reason of keeping the smell downwind.

HERRINGS IN

Tinned fish in tomato sauce. A contraction of "Herrings in tomato sauce". See Goldfish.

H.O.

Hostilities Only. The term applied to personnel who were recruited for the duration of hostilities only

HOOKY

A leading rate. Wears an anchor on his left sleeve. See Kellick.

HOUSEWIFE/HUSSIF

A small cloth wallet containing needles, thread etc.

HUCK OUT

Give a good clean out.

HUCKERS

More frequently called Uckers. A Naval version of Ludo. See Uckers

IN THE RATTLE

In trouble, facing a disciplinary charge. Origin unknown.

JABS

Innoculations/vaccination

JACK

A show off

JAUNTY

The name given to the senior Naval Policeman, correctly titled Master at Arms. Probably a corruption of the French word for policeman, gendarme.

JANKERS

A punishment such as frog marching with a rifle held above one's head, or running around the parade ground.

JIMMY

The executive officer responsible for the ship's cleanliness, and efficient operation was a senior lieutenant, sometimes a Lt. Commander. He was given the particular title of First Lieutenant. Sometimes called Jimmy the One, or Jimmy. (See Number 1).

JIPPERS

Gravy

JOHNNIES

Royal Naval House in Grosvenor Street Sydney was Johnnies. Here was safe, warm clean refuge for the night for a ridiculously paltry sum of money. Additionally, the service provided for an early call and a hot meal. Those conceived, supported and managed Johnnies will be saints, heros and heroines to thousands of sailors for ever more.

KAI/KIE/KYE

A thick hot chocolate drink made from mixing solid chocolate with boiling water and/or milk. Most acceptable during a middle watch in sub zero temperatures.

KELICK

A kellick is rightly a small anchor. As the symbol for the Leading Rate, a Kellick was a leading hand. See Hooky

KIP

Sleep. Having a kip meant having a sleep.

KIPPER

An Englishman/woman

LADDER

Houses have stairs. Ships have ladders.

LASH UP AND STOW

It literally meant that upon awakening in the morning, one had to leap out of the hammock, lash it up neatly with seven (not six and not eight) circumferential rope bindings, and place it vertically with all the other hammocks in the storage space provided. Space is a premium on any Naval vessel, and to have all bedding out of the way during the daytime meant more space for other activities.

LAY AFT

Go to the after end (back or blunt end) of the ship.

LEFT FOOTER

Roman Catholic

LET GO

Cast off the lines holding the ship/boat to the mooring.

LIBERTY MEN

Those sailors with approval for shore leave.

LIMERS

Lime juice.

MACCAS

A derogatory term for new chums who had just joined the Navy. It is a contraction of the word macaroon, a sweet confection allegedly a favourite with young innocents thrust into the hard world of Naval life.

MAKE & MEND

Time off duty, generally but not always with shore leave granted. Originated back in the days of sail when sailors only source of uniforms was to make their own. The Make and Mend time was allowed for the purpose of literally making and mending uniforms.

MASTER AT ARMS

The senior Regulating Chief Petty Officer. See Jaunty; Crusher.

MATELOT

A sailor. Taken from the French language.

MESS

The physical accommodation of a homogeneous group such as Stokers, Petty Officers, Officers etc.

MESS DECK SWEEPER

The person rostered to clean the mess.

NIGHT CLOTHING

Uniform less the collar, or for officers, a scarf in lieu of collar and tie. A relaxed uniform.

NOR' EASTER

No pay

NUMBER 1

(A) See Jimmy

(B) Meaning "the best"

OPPO

Mate or best friend

OUT PIPES

(A) The signal announcing the cessation of free time, sounded after breaks such as lunch or "stand easy", (morning tea).

(B) The signal that instructed all hands to turn lights out and go to sleep, usually at 10.00 pm.

The term originated in the days when pipe smoking was popular, and was permitted only at specified work break times.

PAYING OFF

Finishing or completing. When a sailor left the service, he paid off. When a ship was decommissioned, she paid off.

PENELOPE

The name of the accommodation block where the RM's were housed during their 6 month's stay at "Torrens". It had a feminine name because it was the accommodation block for the WRANS during the 1939-45 war. As it had housed women, it was superior in design and construction to the other huts built to house the war time male sailors.

PERKS

Easy jobs. A contraction of perquisites.

PIGS

Officers

PILOT

Ship's navigator

PINGS

Asdic operators

PIPE

Possibly a small book could be written about this little word. When moored, at the main entrance of each ship, (gangway or brow), there are always men on duty responsible the ship's security. One such person is the Bos'un's Mate, a seaman who has skills in using the Bos'un's Pipe. This device is a whistle like instrument suspended around the wearer's neck by a lanyard or chain. It is a symbol of office. It is also used to to make public announcements either as a precursor to a verbal message or simply by the "tune" that is blown to convey that a particular event is occurring. Such event may be the ship's captain returning on board, or the arrival of a visiting admiral, or simply "Out Pipes".

The pipe is a unique Naval aural communicating device, although in some larger ships and establishments it is supplemented by a bugle played by a trained musician. In the heat of battle, or when in a gale at sea, verbal orders may not always be heard and could be easily misinterpreted. But a familiar tune, whether it be played on a bugle or bos'un's pipe will more likely be heard over other distracting noise, and is less likely to be misinterpreted. Of course there was a finite limit to the number and variety of "tunes" which could be played to initiate specific actions.

PO

Petty Officer. The second rung up the NCO ladder, the first being the Leading Rate (see Kellick), and the top being Chief.

PORT WAR

Spelling may be incorrect. This was a steel reinforced concrete building at the cliff edge of "Watson", in which was housed radio receivers and associated communication networks.

PO's OVERFLOW

Sounds vaguely unpleasant but in fact was simply a dormitory where Petty Officers who could not be accommodated in single cabins were temporarily assigned until more suitable accommodation could be arranged.

PUSSER/PUSSA

A corruption of the maritime word Purser. Various shades of meaning but generally used to indicate correctness, uniformity, adherence to Naval regulations. Thus if you were dressed Pusser, you were wearing Naval regulation uniform (as opposed to Tiddley which would mean your own style of tight waisted trousers, low necked shirt, hat flat-a-back etc.) Also used as a colloquialism for the Supply branch of the service. Supply branch carried out the administrative tasks including the all important fortnightly pay, and the essential provisioning of food.

PUSSER'S DUFF

See Duff. Pudding. As well as being a regular item of meal dessert generally served with thick hot sweet custard, it was alleged to be successfully used for other purposes such as blocking shell holes made by enemy fire, as anchors for cutters, whalers and dingies.

QM/QUARTERMASTER

One of the regular duty men with the Officer of the Watch and Bos'un's Mate.

RABBITS

Items acquired illegally or bought cheaply overseas.

RATING

Any sailor not an NCO. Nowadays called Sailor.

RED LEAD

Tomato sauce

R-ENNERS

Worcestershire sauce. Origin is that Royal Navy (RN) ships served Worcestershire sauce as standard daily rations. (See Stunners).

REQUESTMEN AND DEFAULTERS

A formal process for the executive officer to deal with sailors making requests (eg shore leave, promotion) and for investigating charges (late on duty, untidily dressed). The process was organised by the Regulating office and managed by the Regulating PO or Master At Arms. For important and serious events, the sailor was represented by his Divisional Officer.

RIGHT ARM RATE

Ratings, Leading Hands and PO's all had a trade distinguishing symbol attached to the right forearm sleeve of their uniforms. Radio Mechanics had the badge illustrated on the cover of this book. There were Red Crosses for Sick Berth Attendants, Crossed cannon for Gunnery Instructors, a Propellor for Stokers, etc.

ROCKY

A person who joined for the duration of the war and who subsequently signed on for peacetime service was called a Rocky. Origin unknown.

ROUND RIG

The uniform of bell bottom trousers, round cap. (see Square Rig)

ROUND THE BUOY

Second helping of food. See "Gash".

RUN ASHORE

Shore leave

RUN IN

The preliminary to disciplinary proceedings. "He was run in" meaning he was charged with an offence.

SACK

Bed or hammock as the case may be.

S D OFFICER

A term now obsolete. Officers came from sources such as Cadets through the Naval College, Direct Entry from University, Upper Yardmen from Ratings and NCO, and Special Duties also from Ratings and NCO. Upper Yardmen were subject to the same career stream as Cadets and Direct Entries. SD Officers had limited career opportunities, and although a few attained the rank of Commander, typically their careers would peak at Lieutenant or Lt. Commander.

SCRAN

Food

SCRAN BAG

Loose clothing would be impounded in the "Scran Bag". Punishment was usually the price to pay to recover the items.

SCRAN QUEUE

Simply a queue of sailors waiting to collect their meal.

SCULLING

Left lying around

SCUTTLE

Port hole

SICK BERTH TIFFY.

Sick Bay Attendant

SILK

A thin and narrow black length of material worn around a sailor's neck under the blue and white striped collar, and tied on the chest with a little black ribbon.

SIN BOS'UN

A uniformed gentleman of the cloth, a padre, whatever the denomination. See Devil Dodger.

SINK

To sink someone meant to tell a story that was bigger/better/more astounding than the story the other person was telling.

SKIRMISH

Collect litter.

SKULK/SKULKING

Hide/hiding for the purpose of work avoidance

SLOPS

Naval store from which items of clothing and other personal needs were purchased.

SNARLER

A corruption of the acronym S.N.L.R. meaning services no longer required. Getting a Snarler meant immediate discharge from the service

SNOTTY

A cadet midshipman

SPARKER

Telegraphist

SPIN A DIT

Tell a story

SQUARE RIG

The uniform of single or double breasted suit, conventional shaped trousers and peaked cap. (see Round Rig)

SUARIE

A steady girl friend. From tracking square meaning straight and no deviations.

STACK

Ship's funnel

STAND EASY

A period of rest, but not necessarily a time to do as one pleased. For example, when standing in ranks for divisions, the officer in charge may order "Stand Easy" which means relax your body and mind but under no circumstances may you move your feet or talk.

STUNNERS

Worcestershire sauce. Said to be able to stun insensible any live foreign creature found in one's meal. (See R-Enners)

SUBBY

Contraction of Sub Lieutenant.

SWING THE LEAD

Loaf, bludge.

TAUT SHIP

An efficient ship.

TEA LEAF

Thief

THE OLD MAN

Ship's captain. Sometimes a young man, nevertheless called "the old man" because of his position of authority.

THE OGGIN OR OGWASH

The sea

THE TENT

Hospital ward for VD patients

THICK STRIPER

See SD Officer. This was the second level of promotion for SD Officers.

THIN STRIPER

See SD Officer. This was the first level of promotion for SD Officers.

TICKLERS

Issue of tobacco

TIDDLEY

See Pusser. Anything Tiddley was non standard, unofficial.

TIDDY OGGIES

Cornish Pasties

TIFFY

A corruption of the word Artificer. A civilian qualified tradesman who had completed his 4 year apprenticeship, such as Electrical Mechanic, would upon entering the Navy be given the Petty Officer rate and conditions of employment. Such persons were officially called Artificers (eg Engine Room Artificers or ERA, Electrical Artificers or EA). Sick Berth Attendants, not with qualified trade backgrounds were also called Tiffys, simply because it was easier to say Sick Bay Tiffy rather than Sick Berth Attendant.

TOMBOLA

Bingo/housie housie

TOOTHY/TOOTHWRIGHT

Dentist. See Fang Farrier.

TOT

Issue of rum. Very familiar to those RM's who transferred to the Fleet Air Arm and who were trained in UK.

TRAIN SMASH

Tomato au Gratin. Usually served for breakfast

TURN TO

Means to start work

TWO AND A HALF

A Lieutenant Commander wears as his badge of rank two thick gold braid stripes between which is one thin stripe. Thus two and a half stripes. So a Lieutenant Commander in colloquial terms was a two and a half.

UCKERS

A dice game which lent itself very well to gambling. Although it was not allowed it was played a lot, but with caution for to be caught by an officer or crusher meant certain punishment.

UNDER WEIGH/WAY.

Not moored, moving.

UP HOMERS

A place of welcome to stay when on leave from the ship.

UPPER YARDMAN

Promising young sailors could be promoted to officer rank and to enjoy similar career opportunities as cadet and direct entry officers. Such men were called Upper Yardmen. Something like 12 RM's became officers via the Upper Yardman stream. (See SD officers)

WAKY WAKY

The announcement that the time for sleep was finished and the time to start another day's work was now.

WATCH

From the days of sail, it literally meant to be on deck to watch out for the ship's safety and progress. Periods of watch were usually four hours commencing midnight (Middle or Graveyard), 0400 (Morning), 0800 (Forenoon), 1200 (Afternoon) and 2000 (First). The four hours between 1600 and 2000 were split into two two hour watches called the first and second Dog watch. In days of sail the crew was divided into two groups called Port and Starboard watch, so it was four hours on watch and four hours off watch. To allow an orderly and fair rotation of the good (eg First) and bad (eg Middle) watches, the Dog watch system was introduced such that both watch groups (Port and Starboard) would have these on alternate nights. The term watch is still used to identify a time span and a group of people.

WET

Soft, soppy, silly. From "wet behind the ears" meaning new born.

WET THE BREW.

Make the tea.

YAFFLE BUNS

Probably more correctly known as Kitchener buns. Full of starch and sugar, decidedly unhealthy and thus very much in demand by growing lads.

SYLLABUS "A"

RADIO TECHNOLOGY COURSE FOR RADIO MECHANICS

ROYAL AUSTRALIAN NAVY

SCHOOL OF MINES, ADELAIDE, SOUTH AUSTRALIA

PHASE 1. MATHEMATICS AND PHYSICS

INSTRUCTIONAL TIME

136 HOURS

Revision of Leaving Certificate Standard of Algebra, Trigonometry, Mechanics, Sound.

PHASE 2. ELECTRICAL TECHNOLOGY

INSTRUCTIONAL TIME

136 HOURS

Basic Electrical Theory - Ohms Law, Resistance of conductors, Specific Resistance Calculations, Temperature Coefficients, Electrical Units, Work Power Calculations.

Electromagnetism:- Explanations of Production of Magnetic Fields. Force between conductors, Magnetic Circuits, Hysteresis Curves for Materials. Permeability Cycles of Magnetism. EMF:- Production of, Explanation of Self and Mutual (Mutual) Induction, Flemings R.H. Rule, Rise and Decay of Currents in Magnetic circuits. Inductive circuits.

Conductors:- System of, Series and Parallel arrangements. Conductance; Kirchoff Laws, Wheatstone Bridge Network. Algebraic method of Resistance Calculation.

Electrostatics:- Production and distribution of Electric Fields, Coulombs Law.

Dielectric Constant, Calculation of Systems of Capacitors, Parallel and Series Calculation of Total Capacitance. Charge and discharge of Capacitor, Explanation of Time Constants, Properties of Dielectric Materials.

Electrolysis:- Primary and Secondary Cells. Construction, Calculation of Capacity and Efficiency of Accumulators.

Direct Current Machines:- Motors and Generators. Explanation of Construction, Laminated Materials, Eddy Currents, Principles of Commutation. Explanation of Shunt and Series Windings, Armature Reaction, Use of Interpoles.

A.C. Theory:- Calculation of Capacitive and Inductive Reactance, Resistance Capacitance and Inductance in Series Parallel Arrangements. Calculation of Impedance (Algebraic Method). Electrical Resonance. Graphical Presentation of Inductive and Capacitive quantities. Polyphase currents. Explanation of Star Delta circuit arrangements.

Transformers:- Construction, Core materials, Influence of Frequency Transformation Ratios, Explanation of No Load and Load effects, Copper and Iron losses, Air gaps. Efficiency Calculations. Construction of Auto Transformers.

alternators:- construction of Stator and Rotor. Explanation of Windings, Speed frequency relationship, Calculation of

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PHASE 3. ELECTRONIC THEORY

Thermionic Emission:- Principles of, Space Charge effect. Directly and indirectly heated Cathodes, Component parts, applications and characteristics of Diode, Triode, Tetrode, Beam Power Tetrode and Pentode.

Preparation and Calculation of Plate, Mutual Grid Current characteristics.

Calculation of U_{RA} and GM .

Screen and Suppressor characteristics, Secondary Emission in Tetrodes, Dynamic characteristics, Phase relationships.

Interstage coupling:- R.C., L.C., Transformer Coupling. Frequency Characteristics and applications.

Types of Bias:- Battery, Grid and Cathode, Degeneration and effects of Bypass Capacitors.

Principles of Rectifiers:- R.M.S., Peak Voltage, Calculations, Hard and Soft Rectifiers. Filter Networks. Filters, Choke input, Vibrator Power supplies.

Classes of Amplification.

Construction of microphone:- Moving coil, crystal (PiezoElectric effect) Capacitor types.

Construction of Loudspeakers:- Permag and Electromag.

Design of Multi-stage Audio Amplifiers.

PHASE 4. RADIO RECEIVER THEORY

INSTRUCTIONAL TIME
136 HOURS.

Radio Frequency Wave Theory, Carrier Waves.

Preliminary explanation of Amplitude and Frequency Modulation, MCW, ICW.

Theory of T.R.F. autodyne and Superhetrodyne Receivers.

Mixers:- Construction and application of Valves.

Construction of I.F. Transformers :- Tuning Arrangements. Core Materials, Specialised winding arrangements, Selection of Intermediate Frequencies; Causes of Interference.

Second Detectors :- Crystal, Regenerative, Leaky grid, anode bend, Infinite Impedence, Diode, Characteristics and applications.

Automatic Voltage Control, Simple, Delay, Amplified; Reflex Circuits. Principles of Valve Testing. Practical construction and alignment of 4-stage Superhetrodyne Receiver.

PHASE 5. RADIO TRANSMITTER THEORY

INSTRUCTIONAL TIME
136 HOURS

Oscillators :- Requirements, Fundamental Circuit, Explanation of Series and Parallel Hartley, Colpitts, Tuned Anode, Tuned Grid, Franklin and Electron Coupled Crystal Oscillators.

Buffer Amplifiers, Neutralisation of Stages. Frequency Doublers and Treblers. Power Amplifying stages.

Power Supply requirements for Current and Voltage Regulation.

Tuning of Transmitters.

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PHASE 6. RADIO AERIALS AND TRANSMISSION LINES.

68 HOURS

Propagation of Radio Waves from Wires, Polarisation, Radiation Resistance, Calculations of Aerial Length, Aerial losses, Skin Effect in Conductors, Sky and Ground Wave Propagation;

Directive Wire Aerials :- Rhombic, Vee Types.

Transmission Lines :- Open wire, Co-axial, Methods of Termination, Characteristic Impedance, Methods of Feed.

Practical Workshop Training

68 HOURS

Use of Hand Tools, Sheet metal working.

Instruction in soldering, Jointing, etc.

**Total Instructional Time
Time occupied by Course**

**816 HOURS
24 WEEKS**

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SYLLABUS B.

RADAR TECHNOLOGY COURSE FOR RADIO MECHANICS R.A.N.

RADAR SCHOOL - H.M.A.S. WATSON

14 HOURS

Principles and requirements of Radar, Propagation of Waves, Radar Range Determination, Basic Radar Definitions, eg, Pulse Repetition Frequency, Pulse Length, Range Discrimination, Peak Power Output, Mean Power etc.

32 HOURS

Methods of Data Presentation (P.P.I. and "A" & "B" Scan) - Time Base Techniques, Production of Square Waves with R.C. Networks. Long Pulse Generators eg, Multivibrators, Miller Time Base, Eccles Jordan and Kipp Relay Networks. Short Pulse Techniques ie, Bias Differentiation, Grid Limiting etc. Ringing Circuits with R, L, and C Networks. Limiting and Clamping Circuits. Electrostatic and Electromagnetic Deflection Circuits.

32 HOURS

Requirements of Radar Receiver at UHF. Special Valve Requirements eg, Grounded Grid Triodes. Miniature Valves - Limitation of Valves. Characteristics of Noise. Layout of Components - influence of interelectrode and interwiring capacity at UHF. Mixing and Detection. Video Amplifiers and Cathode Followers.

32 HOURS

Modulation Techniques, Pulse Shaping, Choke Capacity, Modulators, Thyratrons, Trigger Circuits, Discharge Lines, L Band UHF Radar Transmitters. Tuned Circuits, Lecher Lines, Cavity Resonators eg, Rhumbatron, Magnetron, Klystron. 10 cm Radar Transmitter Circuitry. Transmission Lines, Impedance Changing devices eg Bazooka, Jews Harp, and Balun. Waveguide matching and modes of operation. Circular Waveguides. T/R Devices

18 HOURS

Radar Aerial Arrays. Dipoles, Parasitic Arrays - Directors and Reflectors, Yagi. Broadside and Colinear. Parabolic Reflectors - Waveguide Dipole fed. Sliced Parabolics. Field Strength Measurements. Vertical and Horizontal Polars.

Theory and Practical Instruction of Radar Equipment.

256 HOURS

Radar Equipment, 90 Megacycle, 3000 Megacycle Bands. Examination of, and instruction in, circuitry used in four current Radar sets. Remote Power Control of Aerial Arrays (ie, Servo Control). Beam Switching techniques. Use of specialised test equipment required for maintenance and fault-finding. Calibration, tuning and alignment of equipment.

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Radio Navigational Equipment

64 HOURS

Instruction in circuitry used for such pulse Navigation Equipment eg, LORAN. This includes specialised Pulse Counter Circuitry. Calibration, tuning and Alignment. Knowledge and use of Test Equipment required.

Specialised Radar Equipment

32 HOURS

Instruction in equipment used in specialised techniques, Radar Detection, Frequency measurement and pulse counting. Suppression equipment.

Maintenance.

120 HOURS

Maintenance, under supervision, of the above operational Radar Equipment

Total Instructional Time - 608 Hours
Period occupied by course - 19 Weeks

SYLLABUS C.

QUALIFYING COURSE FOR PETTY OFFICER RADIO ELECTRICIAN

THEORY

INSTRUCTIONAL TIME 500 HOURS
DURATION 4 MONTHS

27 HOURS

1. MATHEMATICS

Revision of Algebra. Trigonometrical Functions. Instruction in Calculus to standard of simple differentiation and integration of Trigonometrical functions. Algebraic Series. Use of Operator J. Fouriers Theorem and Analysis. Decibels.

18 HOURS

2. ELECTRICAL THEORY

Algebraic treatment of Series, Parallel arrangements of L. C. and R. Use of Operator J in Impedance Calculations. Graphical solutions to Impedance Calculations. Selectivity Curves, Effects in variation of L/C ratio. Q Factors.

24 HOURS

Transformers :- Mathematical and graphical treatment of, Effects of Copper and Iron Losses, Magnetic Leakage, Theoretical and Practical Power Transformer Inductive and Capacitive Loading. Transformer Regulation, Efficiency. Practical design considerations of Power Transformers. Audio Frequency Transformers, methods of connection. Requirements for different classes of operation. Audio Output Transformers. Radio Frequency Transformers.

18 HOURS

Coupling :- Mathematical Treatment of and Circuit parameters of Mutual Inductive, Mutual Capacity, Direct Resistive, Inductive and Capacitive. External Resistive, Inductive and Capacitive. Transferred Impedance. Resonant Frequency for Types of Coupling, Optimum Coupling.

16 HOURS

Filters :- Low and High Pass Filters. Filter Circuits for Power Supplies including choke input, II sections, Composite filters, Interactive Impedance of filters. Calculation of Impedance for Termination. Calculation of frequency cut-off. Constant K filters. Band Pass filters. Tuned choke filters. Swinging choke filters. Resistance Capacity and Quartz Crystal filters. Effect of out of balance K settings. Phase shifting networks.

6 HOURS

A.C. Bridge Networks

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42 HOURS

Valve Theory :- Characteristics. IA/VA Curves. Filament of Grid Characteristics, Anode Current Impedance. Mutual Characteristics, conductance. Relationship of RA, U, GM. Dynamic Characteristics - Load Curves for Triodes, Tetrodes and Pentodes. Leadlines. Effects of secondary emission in Tetrodes. Construction and use of Duplex valves and variable Mu tubes. Gas filled valves - soft Diodes, Neon Tubes, Stabilivolt and associated circuitry. Thyratrons, preparation of characteristics. Multigrid Valves, Analysis of Frequency conversion. Electronic mixing. Conversion conductance.

12 HOURS

Power Supplies :- Full and Half Wave Rectification, calculation of percentage ripple, Efficiency. Use of Cathode equalising Coils and Resistance. Thre Phase inputs. Half and Full Wave, Voltage Doubler Circuits, Biassed Rectifiers. Power Supplies with Metal Rectifiers. Mercury Vapour and Arc Rectifiers.

45 HOURS

Amplifiers :- Amplitude, Frequency, Non Linear and Phase Distortion. Production of noise - Thermal Agitation, Shott Effect, Klicker Effect, Partition Noise. Equivalent circuits of Amplifiers. Types of Amplifiers :- R.C. Coupled, calculation of values for design of. Transformer coupled - effect of shunted resistance. Inductive coupling. Tuned Voltage Amplifiers - Tuned choke capacity coupling. Classes of Amplification - Mathematical Analysis. Efficiency claculations of Class A, AB1, AB2, Class B and Class C. Push Pull Amplification. Phase Splitters. Parallel arrangement of valves. Input admittance of Amplifier valves, tuned amplifiers, Neutralisation of Effects. Regeneration in Amplifiers R.F. and A.F. Feedback Amplifiers. Miller Effect - Quantitative treatment. Miscellaneous Amplifier circuits.

27 HOURS

Valve Oscillators :- Preliminary treatment of Oscillatory Circuits. Decrement Requirements for, and classification of, Oscillation. Fundamental Circuitry. Series, Parallel and divided Hartley circuits. Colpitts Ultra audion Franklin Meissner T.A.T.G. Electron Coupled. Triode, Tetrode, and Pentode Crystal Oscillators. Pierce Crystal Oscillators. Harmonic Generation in Grid, Plate, Anode Dynatron Oscillators. Parasitic Oscillations, effect of. Detectors :-Diode, Triode Upper and Lower Bend, cumulative Grid Detection, Infinite impedance.

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9 HOURS

A.V.C. :- Simple, Delayed Quiescent. Microphones nad Loudspeakers.
Superhetrodyne principles - revision of.

27 HOURS

Transmitters :- Master Oscillators - circuit requirements for stability. Modulation, Methodes in use. Heising or choke control. Series, Grid Suppressor Grid. Modulated Oscillators. Radar Modulation - Grid and Anode. Frequency modulation - Reactance Stages.

6 HOURS

Receivers :- Frequency Modulation, Discriminators.

9 HOURS

Propagation of Radio Waves :- Ground, Direct, Reflection of Atmospheric Bending, Sky Waves. Atmospheric Layers - Effect on Radio Frequency Waves. Limiting Frequencies, Maximum Usable Frequencies. Sky Wave Loss.

12 HOURS

Line Circuits and Tuned Lines :- Standing Waves, Frequency and Wave Length. Resonant Line Circuits. Quarter Wave Transformers. tuned Elements at UHF. Parasitic Suppressors.

8 HOURS

Antennae :- Polarisation, Radiation Angles, Impedance, Hertz Aerial, Long Wire, Long Wire Directional Aerials. Lobe, pattern of. Vee and Rhombic Antennae, calculation of dimensions. Delta Matching.

8 HOURS

Transmission Lines :- Mathematical Treatment of. Open Wire. Co-axial. Balance to Unbalance Transformers :- Trombone, Jews Harp, Bazooka, Pewsey Stub.

6 HOURS

Waveguides :- Derivation, Modes of operation, Impedance, Termination, Joints, Matching, Attenuation.

6 HOURS

Resonant Cavities :- Magnetrons - characteristics, Bands of operation. Klystrons, Reflex. Rhumbatrons.

12 HOURS

Artificial transmission Lines :- Reflections at Terminals. Open End Lines. Discharge Lines.

1 HOUR

Lissajous Figures :- Frequency and Phase Comparision.

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27 HOURS

Specialised Circuits :-Differentiation, Integration. Symmetrical, Assymetrical Multivibrators. Flip Flops, Kipp and Cathode coupled. Eccles Jordan. Diode limiting and D.C. Restorers. Cathode degeneration and Compensation. Paraphrase Amplifiers, Floating. Long Tailed Pair. Transition Relaxation Amp and Relay. Puckle Time Base. Miller Time Base. Elliptical. Radial Time Bases. Radar Equation - derivation.

134 HOURS

Equipment Instruction and Theory of Operation. :- Detailed examination of Communication Equipments in current use, LF, MF, HF, VHF. These include such devices as Rack Interlock, Wiring Safety circuits. Stabilised Oscillators, Crystal Ovens, Partial Crystal control, Remote Tuning and switching arrangements, automatic Frequency changing devices. Understanding of circuitry and use of Wave metres, Signal Generators, Power Output Meters, necessary to maintain the above.

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APPENDIX A

This is a reprint of the Appendix "A" to CNO 300/46 amended by CNO 246/47, summarising the duration of RMs' courses at that time, ie 1946/1947.

APPENDIX

COURSES FOR RADIO MECHANICS

(A) *Radio Mechanic (R) (Direct Entry).*

- 8 Weeks' Disciplinary Course at Flinders Naval Depot
- 24 Weeks' Technical College Course.
- 2 Weeks' Leave.
- 15 Weeks' Radar Service Training [including 2 weeks R.C.M. (Radar) and 1 week Electronic Navigational Aids].
- 4 weeks' Practical Servicing.

Total: 53 Weeks.

(B) *Radio Mechanics (W/T) (Direct Entry)*

- 8 Weeks' Disciplinary Course at Flinders Naval Depot.
- 24 Weeks' Technical College Course.
- 2 Weeks' Leave.
- 8 Weeks' W/T Service Training at H.M.A.Signal School.
- 2 Weeks R.C.M. (W/T) at H.M.A.S. Watson.
- 1 Week Electronic and Navigational Aids at H.M.A.S. Watson.
- 5 Weeks' W/T Training at H.M.A. "Naval W/T Stations", Canberra.
- 4 Weeks' Practical Servicing at H.M.A.S. Watson.

Total: 54 Weeks

(C) *Conversion Course Radio Mechanic (R) to (W.R.)*

- 4 Weeks' Course in Small Ship W/T.

(D) *Conversion Course Radio Mechanic (S) to (W/T).*

- 4 Weeks at H.M.A.S. Watson in W/T.
- 2 Weeks at H.M.A.S. Watson in R.C.M.
- 1 Week at H.M.A.S. Watson in Electronic and Navigational Aids.
- 1 Week at H.M.A.S. Harman in Perforators, Page Printers, and Line Equipment.

(E) *Qualifying Course for Chief Petty Officer Radio Mechanics (R).*

6 Weeks Course.

(F) *Qualifying Course for Chief Petty Officer Radio Mechanics (W/T).*

6 Weeks Course.

Note.- Ratings who fail courses (C) to (F) may not be recommended for a future course for six months after the date of failure.

(G) Radio Mechanics Recruited from Ratings already serving will undergo courses as detailed in paragraphs (A) and/or (B) above, with the exception of the eight weeks' disciplinary course.
